



382800

AMMUNITION OPERATIONS  
EAST ALTON, ILLINOIS 62024



IL-15-16

199862 AAB

P. O. BOYLE  
LEGAL COUNSEL

October 10, 1975

State of Illinois  
Environmental Protection Agency  
2200 Churchill Road  
Springfield, Illinois 62706

Attention: John Palincsar, Attorney  
Enforcement Section  
Division of Air Pollution Control

Re: Olin Corporation  
Amended Petition for Variance  
PCB No. 75-333

Gentlemen:

Please file the enclosed Amended Petition for Variance  
for Olin Corporation's plant in Williamson County, Illinois.

Yours truly,

*Patrick O. Boyle*  
Patrick O. Boyle

POB/ar  
Enclosure (2)

cc: State of Illinois  
Pollution Control Board  
309 W. Washington Street  
Chicago, Illinois 60606  
Attn: Clerk - w/att. (10)

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

OLIN CORPORATION

STATE OF ILLINOIS  
POLLUTION CONTROL BOARD

OCTOBER 10, 1975

OLIN CORPORATION, )  
a Virginia Corporation, )  
 )  
PETITIONER, )  
 )  
VS. )  
 )  
THE STATE OF ILLINOIS, )  
Environmental Protection )  
Agency, )  
 )  
RESPONDENT )

PCB No. 75-333

AMENDED PETITION FOR VARIANCE

COMES NOW Olin Corporation, a Virginia corporation duly authorized to do business in the State of Illinois, in compliance with the Board's order of August 28, 1975, and submits herewith its amended petition for variance supplementing clause 6 of its original petition and correcting certain errors in exhibits "A" and "B" of its original petition as follows:

1. Petitioner operates an industrial facility in Williamson County, Illinois on real property leased from the Federal Government at the site of the former U. S. Army Ordnance Plant near Marion, Illinois. Products manufactured at this plant are based upon a propellant or pyrotechnic technology. The U. S. Department of Defense is normally the major customer for such products, and the actual items produced vary in

accordance with Government contracts issued on an annual basis.

2. The quantity and type of raw materials processed by Petitioner in Williamson County will vary widely depending upon the requirements of the Federal Government and Petitioner's success in obtaining Government contracts.

While Petitioner cannot state with certainty what its product line or volume will be in 1976, it estimates that the maximum amount and type of hazardous explosive waste generated weekly will be:

Ammonium Nitrate Propellant	500 lbs.
Double Base Propellant	300 lbs.
RDX Type Explosive	200 lbs.
Single Base Propellant	20 lbs.
Ammonium Perchlorate Propellant	20 lbs.
Boron-Potassium Nitrate Propellant	200 lbs.
Black Powder	10 lbs.
Nitroglycerine in Sawdust	25 lbs.
Potassium Perchlorate Propellant	20 lbs.
Firecracker Mix	50 lbs.
Colored Smoke Mix	100 lbs.
Contaminated Packaging	200 lbs.
Pyrotechnic Flare Scrap	50 lbs.

This scrap will be generated by activities such as machine cleaning, floor sweepings and rejected product.

3. Explosive wastes are normally disposed of promptly by open burning. Petitioner has introduced evidence on this practice under its prior variance proceedings numbered:

VR 67-60 of the Illinois Air Pollution Control Board,  
PCB 71-60 of this Board,  
PCB 71-371,

PCB 72-357,

PCB 72-517,

PCB 73-395, and

PCB 74-335.

Open hearings on this disposal problem have been held at East St. Louis on September 10, 1969 under VR 67-60, and at Marion, Illinois on May 21, 1971 and November 14, 1973.

4. In accordance with the terms of its prior variances, Petitioner has designed and built an incinerator for the disposal of its explosive wastes. Attached hereto as exhibit "A" and made a part hereof is a copy of Petitioner's application for incinerator construction and operating permit filed with the Illinois Environmental Protection Agency on January 21, 1974, pursuant to Variance Number PCB 73-395.

Petitioner's tests and conclusions relating to the quantity and types of contaminants discharged were set forth as part of attachment "A". Certain errors have been discovered in the original test report which are covered in the memo of Howard E. Hesketh, P.E., dated September 17, 1975, and included with attachment "A" as a correction.

5. Petitioner submits that the existing emission standards for incinerators are based upon present technology for burning municipal type solid waste. An incinerator to burn explosives represents an advance in the state of the art which is not covered by present emission standards.

Attached hereto as exhibit "B" is a Petition to Amend Regulations which Petitioner has filed simultaneously with this Amended Petition for Variance.

Petitioner believes that compliance with existing emission standards for incinerators would impose an arbitrary and unreasonable hardship for the reasons set out in attachment "B".

6. Petitioner does not believe that a grant of this variance would impose any injury on the public or prevent compliance with national air quality standards.

Petitioner's incinerator is constructed in a remote area on strip mine spoil land owned by Petitioner in Township 9 South, Range 2 East of the Third Principal Meridian in Williamson County, Illinois described as follows:

SW $\frac{1}{4}$ , section 3, less N $\frac{1}{2}$  of NW $\frac{1}{4}$  of SW $\frac{1}{4}$ , section 3, and less N $\frac{1}{2}$  of NE $\frac{1}{4}$  of SW $\frac{1}{4}$ , section 3, S $\frac{1}{2}$  of NW $\frac{1}{4}$  of SE $\frac{1}{4}$ , section 3, SW $\frac{1}{4}$  of SE $\frac{1}{4}$ , section 3. W $\frac{1}{2}$  of S $\frac{1}{2}$  of NE $\frac{1}{4}$  of SE $\frac{1}{4}$ , section 3.

W $\frac{1}{2}$  of SE $\frac{1}{4}$  of SE $\frac{1}{4}$ , section 3.

N $\frac{1}{2}$  of N $\frac{1}{2}$  of NW $\frac{1}{4}$ , section 10.

N $\frac{1}{2}$  of NW $\frac{1}{4}$  of NE $\frac{1}{4}$ , section 10.

N $\frac{1}{2}$  of NE $\frac{1}{4}$  of NE $\frac{1}{4}$ , section 10.

being approximately 290 acres of spoil lands from strip mining operations conducted in the past.

Attached hereto as attachment "C" is a copy of a Geological Survey Map

showing the approximate location of the incinerator and its relationship to the surrounding area.

The Environmental Protection Agency at part 11 of its recommendation under PCB 73-395 stated that particulate concentrations in the area of this incinerator are 32 micrograms per cubic meter (annual geometric mean) and 64 micrograms per cubic meter (maximum 24 hour average). This Board in its opinion noted that the particulate concentrations given are well below the primary and secondary national air quality standards for particulates set forth at 40 C. F. R. 50.6 and 50.7.

Primary air quality standards for particulate matter is 75 micrograms per cubic meter (annual geometric mean) and 260 micrograms per cubic meter (maximum 24 hour concentration).

Petitioner calculates maximum particulate emissions from this incinerator at 2.26 lbs. per hour. It is estimated that 16 hours per week of operation at a firing rate not to exceed 500 lbs. per hour of explosive wastes will be sufficient for Petitioner's needs. Such a level of emissions will cause no harm and the area will remain well below national air quality standards for particulates.

Carbon monoxide emissions from burning certain wastes can reach a maximum level of 19.1 lbs. per hour. Dispersion estimates have been made in accordance with Public Health Service Publication No. 999-AP-26. The maximum carbon monoxide concentration resulting from operation

of the incinerator under worst climatic conditions with a 5 mph wind will occur approximately 0.3 miles from the stack. Concentration at this distance would be 0.57 ppm. There are no residential areas within 0.3 miles of the incinerator, and the maximum one-hour concentration of carbon monoxide permitted under 40 C.F.R. 50.8 is 35.0 ppm.

Background concentration of CO is believed to be slight in Williamson County, Illinois. The State of Illinois Environmental Protection Agency in its 1973 Illinois Air Sampling Network Report states on page 32 as follows:

"The major source of carbon monoxide by far is the motor vehicle.

Therefore, because the Federal EPA has kept under its jurisdiction the regulation of emission control equipment on new motor vehicles, the State's primary responsibility for reducing ambient carbon monoxide levels is limited to the development of transportation plans for congested urban areas.

- - - - -  
"CO is monitored in Chicago, Joliet and the East St. Louis area...."

The 1974 Annual Air Quality Report of the Illinois Environmental Protection Agency, at page 37, contains an air contaminant emissions inventory from a 1973 survey of point and area sources.

Williamson County is listed as emitting 24,697 tons per year of carbon monoxide. Petitioner contends that its incinerator contributes an insignificant part of this total.

Its emissions of carbon monoxide were so small that no emissions from

incineration were shown in the point source emissions inventory summary for Williamson County on page 138 of the report. The data base for the point source emissions inventory was derived from the Agency's 1974 inventory of point sources. Petitioner's incinerator was operated under variance PCB 73-395 and PCB 74-335 during 1974. Petitioner submits that operation of its incinerator under these prior variances has not prevented attainment of national primary and secondary standards for CO in Williamson County, Illinois.

CO emissions are viewed by the State of Illinois as being related primarily to motor vehicles. Petitioner estimates that its incinerator emits the same amount of CO per year as an automobile driven 12,750 miles at 35 mph. Such a level of emission in a rural area will cause no harm and will not prevent the attainment of air quality standards set forth at 40 C.F.R. 50.8.

WHEREFORE, Olin Corporation prays the Board to grant it a variance permitting it to burn explosive wastes in its incinerator under such terms and conditions as are appropriate for one year by granting relief from the following air pollution control regulations of the State of Illinois:

Rule 204: Compliance Programs and Project Completion Schedules -  
Petitioner seeks relief from this rule during such time as the Board considers its Petition to Amend Regulations which is set forth as attachment "B" hereof.

Rule 203 (e): Particulate Emission Standards and Limitations for Incinerators, and



Rule 206 (b): Carbon Monoxide Emission Standards and Limitations  
for Incinerators.

Respectfully submitted,

OLIN CORPORATION

by Patrick O. Boyle

Patrick O. Boyle  
Attorney at Law  
East Alton, Illinois 62024

Phone: 618- 258-2603

TO: ENFORCEMENT SERVICES  
FROM: DIVISION OF AIR POLLUTION CONTROL  
SUBJECT: VARIANCE; PCB NO. \_\_\_\_\_  
AGENCY NO. 2838  
ID NO. 199055AAR

Attached variance petition is being forwarded to the Regional Office so a technical investigation may commence immediately.

Copies have been forwarded to the other Divisions to determine if pertinent information may be supplemented to this case. If so, their information should be forwarded to Enforcement Services no later than \_\_\_\_\_.

1. Name and address (including county) of Petitioner; also name and address (including county) of location of the installation or property involved, if different.

Olin Corporation, Ammunition Operations, Williamson County. (near Marion)

2. Brief description of variance sought, including expiration date and section numbers of the statute and/or regulations involved:

Variance of Rules 104, 203(e) and 206(b).

3. Date petition received by Agency: August 26, 1975

4. Date by which Agency must file recommendation with Board (30 days from date in item 3) Sept. 24, 1975; due Enforcement Services Sept. 11, 1975.

5. Name, address and telephone number of Region Office and/or engineer(s) who will make the technical investigation:

Paul Schmierbach, Regional Manager, 2209 West Main Street, Marion, Illinois,  
(618) 997-4371 Ext. 272

6. Name and address of any person(s) in the county in which the installation or property involved is located who has in writing requested notice of variance petitions:

7. Remarks: \_\_\_\_\_

cc: Region 5

B. Schafer

Enforcement Services

199055 AAR

AMMUNITION OPERATIONS  
EAST ALTON, ILLINOIS 62024



P. O. BOYLE  
LEGAL COUNSEL

August 22, 1975

State of Illinois  
Environmental Protection Agency  
2200 Churchill Road  
Springfield, Illinois 62706

Attention: Division of Air Pollution Control  
Petition Section

Re: Olin Corporation  
Petition for Variance

Gentlemen:

Please file the enclosed Petition for Variance for Olin Corporation's plant in Williamson County, Illinois.

Yours truly,

*Patrick O. Boyle*  
Patrick O. Boyle

POB/ar  
Enclosures (2)

cc: State of Illinois  
Pollution Control Board  
309 W. Washington Street  
Chicago, Illinois 60606  
Attn: Clerk - w/att. (10)

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RECEIVED  
AUG 26 1975  
ENVIRONMENTAL PROTECTION AGENCY  
STATE OF ILLINOIS

STATE OF ILLINOIS  
POLLUTION CONTROL BOARD

AUGUST 22, 1975

OLIN CORPORATION, )  
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VS. )  
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THE STATE OF ILLINOIS, )  
Environmental Protection )  
Agency, )  
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RESPONDENT )

PCB No. \_\_\_\_\_

PETITION FOR VARIANCE

COMES NOW Olin Corporation, a Virginia corporation duly authorized to do business in the State of Illinois, and states to the board as follows:

1. Petitioner operates an industrial facility in Williamson County, Illinois on real property leased from the Federal Government at the site of the former U. S. Army Ordnance Plant near Marion, Illinois. Products manufactured at this plant are based upon a propellant or pyrotechnic technology. The U. S. Department of Defense is normally the major customer for such products, and the actual items produced vary in accordance with Government contracts issued on an annual basis.
2. The quantity and type of raw materials processed by Petitioner in Williamson County will vary widely depending upon the requirements of

the Federal Government and Petitioner's success in obtaining Government contracts.

While Petitioner cannot state with certainty what its product line or volume will be in 1976, it estimates that the maximum amount and type of hazardous explosive waste generated weekly will be:

Ammonium Nitrate Propellant	500 lbs.
Double Base Propellant	300 lbs.
RDX Type Explosive	200 lbs.
Single Base Propellant	20 lbs.
Ammonium Perchlorate Propellant	20 lbs.
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Pyrotechnic Flare Scrap	50 lbs.

This scrap will be generated by activities such as machine cleaning, floor sweepings and rejected product.

3. Explosive wastes are normally disposed of promptly by open burning. Petitioner has introduced evidence on this practice under its prior variance proceedings numbered:

VR 67-60 of the Illinois Air Pollution Control Board,

PCB 71-60 of this Board,

PCB 71-371,

PCB 72-357,

PCB 72-517,

PCB 73-395, and

PCB 74-335.

widely depending upon Petitioner's success in bidding for Government contracts. Actual amounts of explosive wastes generated are directly related to production volume. While Petitioner cannot state with certainty what its product line or volume will be in 1975, it is estimated that the maximum amount of explosive waste generated weekly will not exceed the following amounts:

Ammonium Nitrate Propellant	500 lbs.
Double Base Propellant	300 lbs.
RDX Type Explosive	200 lbs.
Single Base Propellant	20 lbs.
Ammonium Perchlorate Propellant	20 lbs.
Boron-Potassium Nitrate Propellant	200 lbs.
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Potassium Perchlorate Propellant	20 lbs.
Firecracker Mix	50 lbs.
Colored Smoke Mix	100 lbs.
Contaminated Packaging	200 lbs.
Pyrotechnic Flare Scrap	50 lbs.

This scrap will be generated by activities such as machine cleaning, floor sweepings and rejected product.

Petitioner proposes to dispose of the above described scrap in its experimental combustion device which is operated two days a week. This device will handle a maximum scrap rate of 400 lbs. per hour. Normally the scrap is fed in 2 to 3 lb. increments and each increment is fully consumed before another is added.

5. The quantity and type of contaminants discharged by Petitioner's experimental combustion chamber are estimated to be less than 24 grains of particulate matter and less than 0.001 cubic feet of carbon monoxide

per pound of scrap burned. Attached hereto as Exhibit "A" is Petitioner's application for incinerator construction and operating permit filed with the Agency on January 21, 1974, pursuant to Variance PCB 73-395.

Petitioner's tests and conclusions relating to quantity and types of contaminants discharged are set forth therein. Emissions from open burning of Petitioner's explosive wastes were estimated based upon tests made May 13, 1971 and August 11, 1971. These tests were submitted under PCB 71-60, and copies are attached hereto as Exhibit "B".

6. Petitioner has introduced uncontroverted evidence under the proceedings cited at paragraph 2 hereof that the only presently accepted safe practice in the explosive industry for disposal of the type and quantity of waste here involved is open burning. Under the terms of the prior variance proceedings, Petitioner has developed and operated its experimental combustion chamber with the pollution control equipment as described in Exhibit "A" attached hereto. This device represents an advance in the state of the art of explosive waste disposal.

The device here involved is designed to operate with approximately 3000% excess air to insure that the rapidly expanding gases from the combustion of explosive wastes are pulled through the scrubbing devices rather than puffed out the various openings of the combustion chamber. Further, the explosive scrap burned has a low carbon content. Thus, when the particulate emission calculations of rule 203(e) are applied to this device with the required adjustments eliminating excess air and correcting to

12% CO<sub>2</sub>, it does not meet the applicable regulations. It does, however, remove 99.74% by weight of the particulate emissions generated.

The carbon monoxide emissions limit of rule 206(b) is also exceeded by this device when the required correction to 50% excess air is made.

Charcoal at the base of the combustion chamber is utilized as an ignition source for the explosive scrap and as a refractory material for the extremely high flame temperature resulting from the burning of this scrap. While the flame temperature is high, the heat value of this material is low, and it is rapidly cooled by the excess air required. Petitioner believes that this sequence of events generates the unacceptably high amounts of carbon monoxide. It should be noted, however, that the maximum carbon monoxide produced is 1.6 lb. per hour of operation.

7. Petitioner has no program to bring this device into compliance with existing regulations. It is Petitioner's contention that this device represents an advance in the state of the art which is not recognized by present regulations.

Petitioner has discussed its position with the Standards Section of the Division of Air Pollution Control, Environmental Protection Agency, on several occasions. A proposed revision to the regulations covering the disposal of explosive waste in Petitioner's device was submitted to the Agency for comment on November 6, 1973. On August 16, 1974, the Agency commented informally at a meeting in Springfield that it recognized a problem in applying the existing particulate emission standards to in-



cinerators burning low carbon wastes. Petitioner has agreed to comment to the Agency on the feasibility of a low carbon content waste type standard applicable to explosive waste disposal in its device.

Petitioner intends to continue to seek with the Agency a mutually acceptable amendment to existing regulations which will cover the device described herein and, thereby, bring Petitioner into compliance.

8. Petitioner has introduced uncontroverted evidence at the prior variance proceedings cited under clause 2 that compliance with existing air pollution regulations would impose an arbitrary and unreasonable hardship in that it would cause all explosive related manufacturing activity in the State to cease. As a standard safety practice in the industry, explosive waste is promptly gathered and destroyed. Open burning is the accepted safe method of destruction, and Petitioner's device represents an advance in the state of the art which greatly reduces the particulate emissions from the disposal process.

9. Petitioner does not believe that the grant of a variance hereunder would impose any injury on the public. Disposal of explosive scrap is conducted on Petitioner's property at a remote site in Williamson County described as follows:

SW $\frac{1}{4}$ , section 3, less N $\frac{1}{2}$  of NW $\frac{1}{4}$  of SW $\frac{1}{4}$ , section 3, and less N $\frac{1}{2}$  of NE $\frac{1}{4}$  of SW $\frac{1}{4}$ , section 3. S $\frac{1}{2}$  of NW $\frac{1}{4}$  of SE $\frac{1}{4}$ , section 3, SW $\frac{1}{4}$  of SE $\frac{1}{4}$ , section 3.

W $\frac{1}{2}$  of S $\frac{1}{2}$  of NE $\frac{1}{4}$  of SE $\frac{1}{4}$ , section 3.

W $\frac{1}{2}$  of SE $\frac{1}{4}$  of SE $\frac{1}{4}$ , section 3.

$N\frac{1}{2}$  of  $N\frac{1}{2}$  of  $NW\frac{1}{4}$ , section 10.

$N\frac{1}{2}$  of  $NW\frac{1}{4}$  of  $NE\frac{1}{4}$ , section 10.

$N\frac{1}{2}$  of  $NE\frac{1}{4}$  of  $NE\frac{1}{4}$ , section 10.

being approximately 290 acres of spoil lands from strip mining operations conducted in the past.

Attached hereto as Exhibit "C" is a copy of a Geological Survey Map showing the approximate location of the device and its relationship to the surrounding area.

Dispersal of emissions from the site will vary depending upon atmospheric conditions. Testimony of H. E. Hesketh, PhD, pages 142, 143, 151 and 152 of the transcript in PCB 71-60 sets forth an opinion that the maximum ground level concentration of particulates from open burning of Petitioner's scrap would be less than 10% of the maximum 8 hour daily exposure permitted by industrial hygiene standards based upon standard diffusion equations at a distance of .5 mile downstream during times of normal atmospheric conditions. This amount would, of course, be greatly reduced if the waste were burned in Petitioner's device which removes 99.74% by weight of the particulate matter generated in this disposal process. Further, Petitioner's disposal is conducted usually only two days a week for limited times.

WHEREFORE, for the above stated reasons, Petitioner prays the Board to grant one of the following alternative reliefs for a period of one year:

1. Grant the Petitioner a variance from rules 203(e) and 206(b) in order that Petitioner may continue to operate the device described herein for

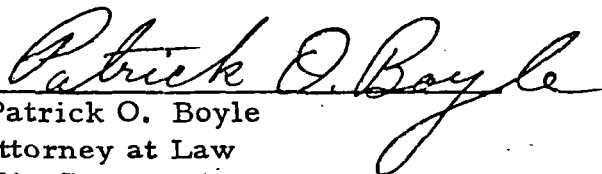
the destruction of explosive wastes after the expiration of the present variance on December 13, 1974. Petitioner further seeks clarification as to whether a permit will be required under rule 103 to continue the operation of this device, and, if so, Petitioner seeks relief from rule 104 requiring a compliance program until such time as the Agency and the Board have reached final positions on regulation revisions proposed by the Petitioner.

2. Grant to Petitioner a variance from rule 502 and section 9(c) of the Act in order that Petitioner may dispose of its explosive wastes by open burning.

Respectfully submitted,

OLIN CORPORATION

By



Patrick O. Boyle  
Attorney at Law  
Olin Corporation  
East Alton, Illinois 62024

Phone: 618- 258-2000